

HARVARD MEDICAL ALUMNI BULLETIN

CELEBRATION OF THE FOUNDING
OF THE CHILDREN'S HOSPITAL

HARVEY CUSHING



HARVARD UNIVERSITY
SCHOOL OF MEDICINE AND PUBLIC HEALTH
LIBRARY

2 NOV 1939

October, 1939



IN DEPRESSIVE STATES, Benzedrine Sulfate Tablets will often produce a sense of increased energy, mental alertness and capacity for work, but should be used only under the strict supervision of a physician. In depressive psychopathic states, the patient should be institutionalized.

The following articles, selected from an extensive bibliography on the subject, discuss the administration of 'Benzedrine Sulfate Tablets' in depressive states:

BIBLIOGRAPHY

GUTTMANN, E.—The Effect of Benzedrine on Depressive States—*J. Ment. Sci.*, 82:618, September, 1936.

MYERSON, A.—Effect of Benzedrine Sulfate on Mood and Fatigue in Normal and in Neurotic Persons—*Arch. Neurol. & Psychiat.*, 36:816, October, 1936.

DAVIDOFF, E.—A Clinical Study of the Effect of Benzedrine Therapy on Self-Absorbed Patients—*Psychiatric Quart.*, 10:652, October, 1936.

WILBUR, D. L.; MACLEAN, A. R. and ALLEN, E. V.—Clinical Observations on the Effect of Benzedrine Sulphate—*Proc. Staff Meet. Mayo Clin.*, 12:97, February 17, 1937.

NATHANSON, M. H.—The Central Action of Beta-aminopropylbenzene (Benzedrine)—*J. A. M. A.*, 108:528, February 13, 1937.

DAVIDOFF, E. and REIFENSTEIN, E. C., JR.—The Stimulating Action of Benzedrine Sulfate—*J. A. M. A.*, 108:1770, May 22, 1937.

GUTTMANN, E. and SARGANT, W.—Observations on Benzedrine—*Brit. Med. J.*, 1:1013, May 15, 1937.

WOOLLEY, L. F.—The Clinical Effects of Benzedrine Sulphate in Mental Patients with Retarded Activity—*Psychiatric Quart.*, 12:66, January, 1938.

ANDERSON, E. W.—Further Observations on Benzedrine—*Brit. Med. J.*, 2:60, July 9, 1938.

BRINTON, D.—Nervous Diseases—Benzedrine Sulfate—*The Practitioner*, 139:385, October, 1937.

REPORT OF THE COUNCIL ON PHARMACY AND CHEMISTRY—The Present Status of Benzedrine Sulfate—*J. A. M. A.*, 109:2064, December 18, 1937.

REPORT OF THE COUNCIL ON PHARMACY AND CHEMISTRY (Announcement of Acceptance)—*J. A. M. A.*, 111:27, July 2, 1938.

BENZEDRINE SULFATE TABLETS

Each 'Benzedrine Sulfate Tablet' contains amphetamine sulfate, 10 mg. (approximately $\frac{1}{8}$ gr.)

SMITH, KLINE & FRENCH LABORATORIES, PHILADELPHIA, PA.

Established 1841

*Pablum is thoroughly cooked
by a patented process*

and is palatable

*Pablum is thoroughly cooked
by a patented process*

and is low in fiber

*Pablum is thoroughly cooked
by a patented process*

and needs no further cooking

*Pablum is thoroughly cooked
by a patented process*

is rich in iron, rich in calcium,
and rich in vitamins B₁ and G

PABLUM is a palatable mixed cereal food, vitamin and mineral enriched, composed of wheatmeal (farina), oatmeal, cornmeal, wheat embryo, beef bone, brewers' yeast, alfalfa leaf, sodium chloride, and reduced iron. Please enclose professional card when requesting samples of Mead Johnson products to cooperate in preventing their reaching unauthorized persons. Mead Johnson & Company, Evansville, Ind., U.S.A.



THE CHILDREN'S HOSPITAL, RUTLAND STREET, 1869-1870.

The Celebration of the 70th Anniversary of the Founding of the Children's Hospital

*Kenneth D. Blackfan, M.D., Thomas Morgan Rotch Professor of Pediatrics,
Harvard Medical School*

On June 8, 9, and 10, 1939, the Children's Hospital celebrated the 70th anniversary of its founding, and the Nurses' Training School its 50th anniversary. Alumni and alumnae from all parts of the country returned to take part in the exercises. The opening exercises were held in the quadrangle of the Children's Hospital, and concluded with the Commencement program of the Nurses' Training School. The principle addresses were given by Mr. Samuel H. Wolcott, President of the Board of Managers, Dr. Alan Gregg, Miss Stella Goostray and Miss Effie J. Taylor. The celebration ended with a public banquet attended by managers, graduates, employees and friends of the hospital. The presiding officer was Mr. George von L. Meyer, Director of the Hospital. Addresses were made by Dr. George R. Minot; Dr. C. Sidney Burwell; the Governor of Massachusetts, Mr. Leverett Saltonstall; the Mayor of Boston, Mr. James M. Tobin; and the Dean of Harvard University, Mr. George H. Chase. The addresses of Dr. Gregg, Dr. Minot and Dr. Burwell appear in this issue of the *Alumni Bulletin*.

The medical program was divided into two parts. The first was arranged by the present Hospital Staff and consisted of an exhibit which lined the corridors of the hospital, illustrating all branches of the activities now carried on within the Hospital walls. This exhibit gave the visiting graduates and friends of the Hospital a vivid picture of diagnostic, therapeutic, and research advances which have been brought about in the last few years. The second part of the medical program consisted of a

series of papers presented by graduates of the Hospital, now carrying on their medical work outside of Boston. The papers were presented during three half day sessions by graduates who came from points as far away as Seattle, New York, Minneapolis and Dallas. Twelve of the twenty-two speakers hold professorial positions in medical schools throughout the country; the remaining ten, positions of responsibility in hospitals or research laboratories. The medical program ended with a clinicopathological conference conducted by the chiefs of the four services: medicine, surgery, orthopedic surgery, and pathology—Dr. Kenneth D. Blackfan, Dr. William E. Ladd, Dr. Frank R. Ober and Dr. S. Burt Wolbach.

A few words about the Hospital today may be appropriate. They are selected from remarks made before the Alumni of the Children's Hospital on June 9, 1939, by Dr. Sidney Farber of the Department of Pathology of Harvard Medical School, Secretary of the Visiting Staff of the Hospital. A detailed description of the Hospital by the writer was published in the *Alumni Bulletin* a few years ago. When the Hospital was founded in 1869, there were made available 20 beds, although arrangements could not be provided for the care of more than six patients a month. In 1939 the Hospital with 283 beds and a staff of some 150 doctors was able to care for 5,500 house patients in addition to over 64,000 out patients. Figures alone are inadequate to portray the smooth functioning of a comparatively small hospital equipped to take care of all diseases which may

occur in infancy and childhood. The Hospital owes its present form to important and wholly logical changes which have been wrought during the past fifteen years or so by those responsible for its medical destinies with complete coöperation and assistance of the Managers of the Hospital. I shall attempt a brief sketch of the present structure of the Hospital.

The medical divisions of the Hospitals receive their authority from the Board of Managers and the Director. There are four main services: medicine, orthopaedic surgery, pathology and surgery. The chief of each service holds professorial rank at the Harvard Medical School. This union of the Hospital with the Medical School is a most treasured possession and accounts in large part for the character of the Hospital today. There are four associate divisions: bacteriology, chemistry, dental medicine, and roentgenology.

The department of *bacteriology* is conducted by a bacteriologist, an assistant bacteriologist, and two house officers, who have behind them the resources of the department of bacteriology of the Harvard Medical School, since the professor of bacteriology is consulting bacteriologist to the Hospital. The department of *chemistry*, fostered by the department of medicine, as was the bacteriology laboratory originally, carries out routine chemical examinations for the entire Hospital in addition to its own research activities as a part of the department of medicine. The division of *dental medicine* is a relatively new one. There is a visiting stomatologist and two assistants to guide the work of a full-time house officer in this field. In addition to caring for routine problems in dental medicine on the wards, this division carries out research and plays an important part in the education of medical and surgical house officers in problems of stomatological interest. This department has already shown the way for the intelligent use of hospital facilities for dental education. The division of *roentgenology* is headed by a full time man who plays an important part in

undergraduate teaching and consultation with all services of the Hospital in addition to his own important routine.

The Hospital is well served in the matter of consultants. There is a consulting bacteriologist, biological chemist, pharmacologist, physiologist, dermatologist, and ophthalmologist, all of whom hold professorial rank at the Harvard Medical School. The needs of the Hospital are further met by free call upon medical and scientific resources of hospitals and laboratories in the Boston area.

The plan of organization of the four main divisions may be given in outline form.

Table I.

THE DEPARTMENT OF MEDICINE.

Wards: Children's 44 beds. Isolation 19. Neurology 15. Infants' Hospital 45. Total 123 beds.

Divisions: General Medicine. Neurology and Mental Hygiene. Contagious Disease. (Boston Lying-In Hospital New-born Service—Harvard School of Public Health—Child Welfare).

Outpatient Clinics: General. Heart. Eczema. Lues. Endocrine. Anaphylaxis. Rheumatic Fever. Hematology. Muscle Training. Neurology. Various Discharge Clinics. Diabetes and Celiac Disease.

Resident Service: 1 Resident; 4 Assistant Residents (16½ mos.); 8 Internes (16½ mos.).

Research: Wards and Laboratories (Chemistry, Bacteriology and Immunology, Pathologic Physiology and Pathology, Hematology, Infectious Disease).

Connections: Massachusetts General Hospital, House of the Good Samaritan, Boston Lying-In Hospital, Haynes Memorial Hospital, Peter Bent Brigham Hospital, Harvard School of Public Health, Wellesley Convalescent Home.

Table II.

THE DEPARTMENT OF ORTHOPAEDIC SURGERY.

Wards: 50 beds.

Out-Patient Department: Special Clinics—Arthritis. Harvard Infantile Paralysis Commission. Muscle Training (linked with Neurology). Physiotherapy (School). Scoliosis.

Resident Service: 1 Resident (12 mos.); 4 House Officers (8 mos. + 8 mos. at M. G. H.); 2 House Officers in Pathology (8 mos.).

Research: Wards and Laboratories.

Connections: Informal or otherwise with Wellesley Convalescent Home, New England Peabody Home, Massachusetts General Hospital, Peter Bent Brigham Hospital, and Charitable Appliance Shop.

Table III.

THE DEPARTMENT OF SURGERY.

Wards: 96 beds.

Out-Patient Department: General Surgery. Neurosurgery. Plastic Surgery. Hemangioma Clinic.

Divisions: General Surgery. Neurosurgery. Otolaryngology. Plastic Surgery. Orthodontia.

Residence Service: 1 Resident; 1 Assistant Resident; 6 Internes (1 yr. C. H., 16 mos. P. B. B. H., 6 mos. Pathology); 1 Resident in Otolaryngology; 1 Fellow in Neurosurgery (12 mos.).

Research: Wards and Laboratories.

Connections: Peter Bent Brigham Hospital.

Table IV.

THE DEPARTMENT OF PATHOLOGY.

Routine Surgical Pathology and Postmortem Examinations.

Resident Service: 1 Resident (1 yr.); 1 Interne (12 mos.); 1 Medical Interne (6 mos.); 2 Surgical Internes (6 mos.); 2 Orthopaedic Internes (8 mos.).

Research: 1. Pathology and Pathologic Physiology of Diseases of Infancy and Childhood. 2. Neuroanatomy and Pathology. 3. Orthopaedic Pathology. 4. Dental Pathology. 5. Certain Research Activities of all Clinical Divisions.

Table V.

MEDICAL STUDENTS.

1st year—Clinical Embryology.

2nd year—Pathology; Introduction to Pediatrics; Surgical Technique.

3rd year—Course of 5 weeks—diseases affecting the child as a whole—all services.

4th year—One month course in medicine; elective courses given by all services.

Postgraduate—All services.

Recent Changes in the Hospital:

During the past fifteen years or so the Hospital has become for the first time truly a *general hospital for children*. There has been a remarkable increase in the number of men devoting their full energies to the Hospital so that today each major division is in direct charge of either a full-time chief or a full-time man delegated by

the chief to assist him in carrying out his responsibilities. One of the most striking changes has been the great growth of laboratory departments which now serve all clinical divisions of the Hospital. There has been a complete alteration in the teaching program. Today the diseases of childhood are taught not from the point of view of three separate clinical divisions, medicine, surgery, and orthopaedic surgery, but rather from the point of view of the child as a whole. All services contribute to this teaching plan. Research of clinical interest is being conducted in all divisions of the Hospital with the aid of tools derived from the basic sciences.

The last fifteen years have seen tremendous strides in the effectiveness and organization of all departments of the Hospital. Each has progressed to an important degree. And yet not antagonistic to the development of each individual department has been a remarkable and happy integration of activities of all services and divisions bringing together in an attack on the problem of disease in early life techniques and types of knowledge of a variety and magnitude not to be found on any one clinical service. This integration has strengthened rather than weakened each of the divisions of the Hospital, and has served to break down artificial boundaries between clinical services and to prevent the dangerous products of specialization.

The Children's Hospital of 1939, with its full complement of closely integrated units feels it is prepared to carry out the primary aims of its founders; effectively to care for sick children, to train men and women in its special field, and to add to our knowledge concerning the diseases of early life.

The Relationship of Hospital to Medical School

*Alan Gregg, M.D. '16, Director of Medical Sciences,
The Rockefeller Foundation*

With delight in a subject so sound and a theme so substantial let me turn your attention to the relationships of hospital to medical school. Even in an America where we are prone to overorganize everything—where Will Rogers used to say “an American is ready to join anything but his family”—there are, despite our tendency to over-organization, working human relationships which are essentially simple and direct.

In all too many relationships between institutions we seldom stop to examine the realities and reflect upon the potentialities. Organization comes to have the flavor of rigidity and agreements come to connote prohibition of action rather than helpful predictability of conduct. So in the relationship between hospital and medical school we might well take the human arm as a model—with its greater usefulness because of the joints, with one rigid part articulated with another, and motive power, like muscles, fixed in both of the separate but articulated parts. Note that the parts have each their own structural rigidity and thus integrity. The hospital and the school are not fused or ankylosed into a single stick—they work better apart, with freedom, individuality and independence. But both ends of a muscle are not attached to the same bone—nor is the motive power of a hospital effective if limited to the hospital alone, it must be attached to and acting upon neighboring entities.

In the relationship of hospital and medical school what are the peculiar and unique qualities which each possesses and which are of value to the other?

The Medical School is on a river—the river of Youth. My boyhood was spent where rivers issue from the mountains onto the dry plains of Colorado and to have water rights was to have life assured. Out of the Medical School flows a river of

young men who make our present more significant because of their future. A river is the essence of continuity, and yet these young men bring with them the atmosphere of change, of growth, of easy adaptation. Your hospital is irrigated by this river. You can select from the best of these young men and so a connection with the school assures you an advantage in one of the primary tasks of a hospital,—the renewal and recruitment of a superior staff. Men—good men are what matter. Few people appreciate the economy of being closely associated with a university. A bank must pay salaries to young men while they are being tested and sorted. But a medical school is paid by the young men while it tests and selects the best among them. Many a research institute devoid of teaching connections misses the advantage offered by contact with a medical school in the recognition and recruitment of the abler men of the oncoming generation.

Then too human beings usually try to do their best when faced with youth for whom they know they are setting an example. The teaching activities of a hospital thus tend more than almost any other factor to elicit the best efforts from the hospital staff. And as a reward for this extra effort a hospital with close teaching affiliations extends its influence far beyond its staff and its patients. For any hospital you can name in England or France where no teaching goes on you can recall five or ten whose wider significance has come from teaching and so serving unnumbered patients and physicians elsewhere.

And so we see the medical school offering Youth, continuously refreshing and recruiting the hospital, extending the radius of its influence and the duration of its example, holding the staff to concert pitch, and giving the hospital the perpet-

ual contact with youth which outlasts Youth itself.

And now the hospital—what is the unique quality of the hospital? In the leisure of mind appropriate to anniversaries and celebrations let me take you far afield for a moment.

Hilaire Belloc, in a book now unhappily out of print and hard to come by, wrote an excellent account of another human institution, the Road—the history and theory of the Highway. In the Introduction he begins, "The Road is one of the great fundamental institutions of mankind. We forget this because we take it for granted. It seems to be so necessary and natural a part of human life that we forget it ever had an origin or development, or that it is as much the creation of man as the city and the laws. Not only is the Road one of the great human institutions because it is fundamental to social existence, but also because its varied effect appears in every department of the State."

The book proceeds to trace the origin of the road in the early English path or trackway which followed its haphazard course in response to local need, avoiding the natural obstacles of rivers, forests and especially marshes, observant of soils and gradients, serving and thus influenced by different types of conveyance, horseback, sumpter animals and wheeled vehicles. And one further important point about this forerunner of the road—it was maintained by local effort and determined by local use and immediate needs. The trackways of earliest England were primitive, the distances short, the cost of maintenance borne locally and varying directly with the wealth and strength and imagination of those few who had to use such trackways. How many years these scant but necessary roads were in such limited use we do not know, but we do know when the Romans came. They brought a totally new concept of the Road. No one who has ever seen a Roman road will ever forget it. The Romans built roads with overwhelming insistence upon the

true and optimum function of a road—to provide swift, easy, direct, safe, permanent travel. The Romans ignored the cost and effort necessary to build their magnificent roads—or at least they spread that effort over the entire province charging it to military necessity and the cost of government and the common welfare.

By now you must have seen the analogy. The Roman Road of Medicine is the hospital. The hospital does for medicine what the Roman Road did for travel. It does not stop with trivial immediate and short spanned need. The hospital insists upon rendering the optimum in the care of disease—the swift, easy, direct, safe, permanent, far reaching care of the sick. Thanks to Charity the hospital ignores particulate reckonings and like the Roman road builders the founders of a hospital do not cavil at the cost or plan to recoup their money in poll tax or toll road fashion but fix their eyes upon the effectiveness of the hospital's service as a hospital. In those slow centuries when medicine was limited to the services that could be paid for by patrons, or only as the need arose in individual affliction, undivided attention could not be given to the greater potentialities of medicine and its longer reaches. I venture to suggest then that the hospital is to the history of medicine what the Roman Road was to the history of transport—an immense step forward because it is the unique contribution of the hospital that it permits physicians to give undivided attention to the potentialities of medicine regardless of fees, the capacity to pay for everything given, and similar distractions. In the hospital, whose excellences would impoverish any small group of travellers through the Valley of the Shadow, and whose maintenance would beggar any small community of those who could use it, in the hospital we have a Roman Road so excellent that its expanding usefulness justifies its cost by vast increases in the number of those who come to use it.

I do not belittle the lanes and byways where life is lived and food is grown. They

serve and are served by the great highways. They would have meaning and beauty without the highways but progress would be costly and slow and thus precarious.

I do not ignore the private practice of medicine nor underrate its importance—it needs and it serves the hospital.

Nor do I imply that hospitals need no repair. Even the great Roman roads fell into disrepair and neglect in the Dark Ages. A warning that deserves attention if dark days be ahead of us.

But medicine has gone far and fast and straight in the hospital. It is the Roman Road of Medicine—bold, direct, serviceable, and by its wide utility a saving beyond the ken of those who would have killed it with parochial caution or small minded doubt. Charity, by disdaining immediate returns, pays unimagined bonuses eventually, as did the road building policy of the Romans.

Now if it is the peculiar function of the hospital to free doctors' minds of a hundred obstacles to the freest application of their skill, and to focus their attention on the potentialities of medicine itself, what association could be more appropriate than close bonds with the medical school where teaching and research are going on?

But the hospital has two other functions: it is there that the student learns to turn his knowledge through experience into wisdom, and use his facts to acquire skill. And it is in the hospital that the student learns team work and collaboration in the care of the sick. Rightly the hospital insists that the first consideration is the welfare of the patient for so it brings together all the threads of medical science and experience. In some professions we live too much in awe of the learning acquired by mere words and symbols; the hospital corrects that overemphasis by requiring skill, experience and practical judgment and I venture to say the hospital helps to save doctors from being doctrinaire.

And now let us mention some of the factors which favor the articulation of hos-

pital with medical school. First is good will. Good will is a purely sentimental term unless behind it lies the loyalty and trust that come from similar ideals, purposes, motives—in short, values held in common as part of a common heritage. I suspect we underrate the importance of similar values, tastes and manners in matters of administration. All great civilizations have grown out of and at the same time created a homogeneous culture. If education supplies no culture of this kind but merely the tools for competitive professional activity it will be hard to obtain the ends administration seeks to effect. I take it that the primacy of New England in education rests considerably upon the long and lively insistence here upon the same values and standards of personal conduct. Once the resultant mutual trust and recognition of the elements of each other's integrity is secured the most valuable collaboration between school and hospital lies in methods of nomination and selection of staff. The most effective procedure is for the school to nominate and the hospital to give final approval. It is not a method proof against failure. But its failures when they occur are palpable and remediable—not self-perpetuating or unrecognizable. No other method is so likely as this allocation of responsibility, to enlist the active interest of the medical school in the research and teaching taking place in the hospital.

Lastly a factor of enduring value to the coöperation of hospital with medical school is physical proximity. You are to be congratulated upon that advantage already secured, and yet it should be pointed out that special effort must be made here to make up for the handicap of being separated from the rest of Harvard University. For in the ultimate reaches of your thoughts and your plans for this hospital, the criticisms, the suggestions and the contributions from other parts of the University should not be ignored. Sociologists, economists, anthropologists, geneticists, historians, psychologists have knowledge or skills germane to your tasks yet likely to escape you simply

by reason of their absence from the scenes of your work and your leisure. And I say *leisure*, advisedly. When the great embryologist Spemann was chosen head of the Kaiser Wilhelm Institute for Embryologie he said to the President, von Harnack, "Excellency, I cannot promise great discoveries." "We quite understand that," replied von Harnack. "And furthermore," added Spemann, "I cannot promise to be industrious." "What does that mean?" asked von Harnack more attentively. "Because some of my best ideas have come to me when I was not being industrious."

Leisure, I suggest, is rarely generous to those who distrust her.

We have spoken of relationships between hospital and medical school. I have likened those relationships to an articulation, the elbow for example, where separate bones articulate one upon the other, a useful form of independence, a sacrifice of schematic unity to practical mobility. Let us in passing exorcise rheumatism, which renders joints stiff, painful and larger than they need be,—the rheumatism of institutional pride, of tradition that sacrifices a real future for a falsified past, and the rheumatism of formal definitions in place of good will, of letter being thought more important than spirit, in short, on considering the part greater than the whole.

Rheumatism can be acute, inflammatory or atrophic.

I come to an end. I have suggested that if the hospital is the Roman Road of Medicine—if it is the place where medicine can realize to the full its innate potentialities, then it simply must associate with any institution where knowledge is being extended and refined by learning and by research. The hospital cannot wisely confine its staff to repetitious routine, or forego the earnest alertness of the research atmosphere. And above all the hospital must seek out Youth, the youth coming on perpetually through the University. Granted there are complications with students about. As a friend of mine remarked about raising children, "Yes—well, what between the exhaustion of their well-being and the agony of their illnesses, it is a difficult thing to raise children." So with the exuberance and the faults of students—but like the oncoming generations, say, thirty years ago, they turn out pretty well after all!

May I thank you for your attention and lay before you one last suggestion? If you will maintain, expand and cherish your relations with the Medical School you will be trustees not only of your Children's Hospital but of the Hospital for your children's children.

The Activities of the Children's Hospital

George R. Minot, M.D. '12, S.D., F.R.C.P. (Edin. & Lon.) Professor of Medicine, Harvard University

Every hospital is established for the care of sick individuals, but the way in which this primary duty is attended to varies greatly. Success depends on the quality of the many phases of the work. In order to insure superior quality of work and to enable a hospital such as the Children's Hospital with its international reputation to be an outstanding institution, much more must be done than to supply routine care for the sick. The hospital must be utilized not only

for the advancement of knowledge concerning disease and its prevention by carefully planned clinical investigation and study, but also for the education of young men and women in medicine and allied disciplines. These different duties of the Children's Hospital were recognized in the act of incorporation in 1869 when it was indicated that the plan of the hospital embraced a four-fold object: "(1) The medical and surgical treatment of diseases of

children, (2) the attainment and diffusion of knowledge regarding diseases incident to childhood, (3) a system of voluntary nursing including moral and religious nurture, by cultivated Christian women, (4) the training of young women in the duties of nurses."

It is naturally necessary for the Managers and friends of the hospital to continue to support these chief designs of the founders. In doing so it will not be so much a question of new buildings or the quantity of work, but an effort to fulfill the early wishes by not lowering the quality of the hospital activities or lessening the progress of study and education.

Investigation plays an important role in maintaining the hospital as a modern institution and permits patients to receive the very best treatment. There is no place where a patient stands so good a chance of being benefited as in a clinic where his disease is arousing scientific curiosity. The large hospital that does not deliberately, wholeheartedly, and intensively further the development of research or keep up with progress soon becomes one that goes backward.

Doctors deal with human problems, and to solve them an active creative imagination and scientific curiosity are necessary tools. Such qualities are needed by the physician, not because every doctor is expected to conduct investigations leading to new knowledge, but rather because every patient who consults a doctor presents a problem for investigation before the best advice can be offered. Thus, basically, every practitioner of medicine is a clinical investigator, although research is not the *sine qua non* in making a clinician. The investigator in the clinic in his search for truth is not to be thought of as a lone worker or as a man sharply separated from other types of doctors. A close relationship with practitioners, specialists and pure laboratory investigators of many types is mutually beneficial. Cross-fertilization at the borderlines of knowledge can serve to develop new information.

The location of the Children's Hospital next to the Harvard Medical School and School of Public Health, where there are laboratories of pre-clinical sciences, allows the growth of fertilized plots with carefully tested mixtures of thought and knowledge gleaned from experience, books, colleagues, and eternal painstaking study. Co-operative investigations can enhance knowledge concerning the treatment and prevention of disease, especially when spontaneous; if compelled, they are apt to be sterile.

Clinical investigation takes a great variety of forms. Investigation directed towards being familiar with the fundamental advances in medicine and selecting and applying the significant ones for diagnosis, treatment, and prevention of disease is of importance for the development of a high quality of work in a hospital. Studies aimed at solving fundamental problems are basic, and all members of a hospital staff are stimulated to do their own work as well as possible when investigations of this sort are conducted in their environment. From the Children's Hospital very significant contributions have been made in the past by such men as Rotch, Lovett, and Bradford. There is no question but that numerous important advances in knowledge have been made in recent years at this institution by men who are with us today, and these contributions have played an important role in allowing the hospital to be widely known and recognized as a place where splendid work is accomplished.

Some people think that research makes a man heartless, unsympathetic, or indifferent to human suffering. Such is far from the case. Indeed many able clinicians who have spent much time in investigation are unusually keen in their ability to appreciate and to treat wisely the anxieties and emotional disturbances of patients. The clinical investigator is, in fact, apt to be successful somewhat in proportion to his appreciation of the sick person as an individual.

Although for years physicians have

recognized the importance of the medical social and psychological aspects of their patients it is only relatively recently that an intelligent effort has been made in a few places to study these matters rather than leave them to haphazard abilities or individual interests. A considerable fraction of the successful care and treatment of patients, and undoubtedly the prevention of much illness, is to be identified with the proper consideration of sociologic factors. The social component of medicine may vary widely in importance but frequently plays a major role in diagnosis, prognosis, treatment, and prevention of disease and unhappiness. The field is a difficult one for reliable scientific study because it involves all the complexities of human life.

The original plan of the hospital calls for "a system of voluntary nursing, including moral and religious nurture by cultivated Christian women." This scheme, probably passed on from a system originating in England, led to the organization of the "out-door relief department" in 1896 and in 1909 to the establishment of the social service department. Medical social service for children centers its attention around the patient as part of a family group as well as an individual with a developing personality. Medical social work requires action of skillfully trained individuals who need a modest amount of space and money rather than expensive buildings and apparatus. The medical social worker contributes to an understanding of the personal and environmental factors in the health of patients. She may aid in carrying out treatment and help in many ways, but the physician must remain the chief and the social worker must cooperate closely with his program. There is need in most hospitals for a better integration of social work with the activities of internes and visiting staff for such work is a vital part of medicine. There is a tendency for individuals to think that medical social work is a form of charity and does not concern private patients when, in fact, the well-to-do have just as many and often

more complicated problems of this sort than the poor. To attempt to diagnose or treat illness in contrast to treating a case of disease without consideration of the social elements in the patient's life is quite as unscientific and inaccurate as it would be to disregard roentgenological and other laboratory data. We may expect to see the Children's Hospital a leader in the development of medical social work combined with increased attention to sentiments, emotional reactions, psychological and environmental disturbances. The problems of convalescence with which the social worker can help very much deserve more attention than they usually receive. Indeed one of the needs of this community is not only improved convalescent care but an increase in beds for convalescent patients.

An important aspect of the Infants and Children's Hospitals is that they can care for children with all types of disease from birth to 12 years of age. The pediatric division is intimately related to the surgical, orthopaedic, laboratory, and other units of the institutions. Many pediatric clinics in this country have been separated from other types of clinics where children as well as adults are treated, but at the Children's Hospital all branches of medicine and surgery relating to children exist within its walls. It is thus a truly general hospital for children as the result of the wisdom of the Managers and staff. This allows the institution to be an unusually satisfactory place for the training of physicians, nurses, and social workers to take care of children because they must be familiar not only with the medical, but with the surgical, dental, nose and throat, and other conditions that may afflict children.

In former days the different branches of medicine and surgery as related to children were taught separately and at unrelated times. Now the Harvard Medical School students are taught to become acquainted with the broad aspects of diseases of children and their prevention, and the course is so arranged that in one period of time they have opportunity to see all aspects of

the ailments peculiar to infants and children. The beneficial influence of adequate teaching in a hospital on the work of the staff and upon the welfare of its patients as well as upon individuals at large has become well recognized. Investigative work also has great educational value for the staff and students, which is in addition to what is gained by this type of work itself. It helps develop the mind and aids to develop ability to judge critically and to ponder wisely on topics where emotions blend with cold reason, which helps to prevent the usual mistake of allowing emotions to dominate one's judgment.

The training of nurses at the Children's Hospital is of high order and they graduate with the belief and feeling that their chief interest is the comfort and critical care of their patient, in contrast to some nurses whose chief interest seems to be the orderliness of their linen closet or their daily routine duties.

A children's hospital holds a unique place in the community and one of great importance for many reasons, one of which is the fact that its staff can accomplish much in the prevention of disease. There is no phase of medicine more essential than preventive pediatrics. By preventing disease in children or preventing the progress of disease if it has already arisen in childhood, there will be less illness in adults; thus the effect on the health of the community is very significant. Hospital wards for adults always contain patients with conditions that might have been prevented in early life, and frequently the physician in charge of such a ward remarks "If only such and such had been done when this patient was a child the present state of affairs would not have existed." An enormous amount of good can be accomplished by seeing to it that the nutrition of every child is ideal.

The effects of food on vitality and normal development are fundamental. The effects of unsatisfactory nutrition play important roles in economic, educational, and sociologic problems as well as induce disorders referable to every branch of medicine and dentistry. Nutritional disorders can arise particularly easily during the period of growth when the demands for the thirty-six or more substances required for normal nutrition are relatively great. Borderline states of nutritional instability are common in children. At no period of life is optimal nutrition more important than in infancy and childhood because nutritional defects so readily produced then may be at the root of disorders arising at any time later in life and may even become apparent only in later generations. Thus the early correction of any nutritional defect in the child is of the utmost importance. The investigations concerning nutritional factors at the Children's Hospital and the attention given to arranging an optimal diet for each child have an influence that reaches far beyond the walls of the hospital.

Dr. G. Canby Robinson, toward the end of his new book, "The Patient as a Person," has stated, regarding the quality of medical care: "Efforts to maintain and improve the quality of medical care centers in the individual relationship of doctor and patient. The quality of medical care, regardless of how it is organized and how its economic problems may be eventually solved, comes back in its final analysis to the quality of the medical service given by the doctor to the individual patient." This is dependent upon adequate time and facilities, upon proper education, the diffusion and advancement of knowledge, and the recognition that the total individual, his case as well as his person, must be properly treated.

Children's Hospital Celebration, June 9, 1939

C. Sidney Burwell, M.D. '19, LL.D., Research Professor and Dean of the Faculty of Medicine, Harvard Medical School

Mr. Toastmaster, members of the Board of Managers, ladies and gentlemen: First, may I transmit to you from co-workers in a common cause, the hearty and sincere congratulations of the Faculty of Medicine of Harvard University on seventy years of distinguished and productive service on the part of the Children's Hospital. May I express also the Faculty's appreciation of your interested and understanding coöperation during the years of close association between the Hospital and the Medical School, and your hospitality to the modern and useful enterprises of the School of Public Health.

Three score and ten years is, as the psalmist implied, quite a spell. The world of 1869 was a different place from the world of 1939. The war between the states was just over; the Franco-Prussian War was just about to begin; U. S. Grant was President of the United States; the Emperor Maximilian had just been shot in Mexico; Napoleon III was the Emperor of France, and a young man named Gladstone was the Prime Minister of England. Pasteur was the Professor of Chemistry at the Sorbonne; Charles Eliot was beginning his career as President of Harvard; Oliver Wendell Holmes was the Professor of Anatomy. Women wore hoop skirts and hats which look odd to those of us accustomed to the simple and functional ones of today. There was leisure (or so it is said), and there were no telephones, no automobiles, no radios. But there were poverty and illness and taxes and death.

Bacteriology was in its infancy and serums were unknown. No one had ever heard of vitamins. Anaesthesia had been discovered to make operations possible, but asepsis had not yet been developed to make them safe. And children by and large died earlier and suffered more disability than they do today. Happily there were people in Boston in 1869 who were interested in

children and the illnesses from which they suffer. A wise group of men and women, whose successors you are, organized the Children's Hospital. It is interesting that while medicine has changed so fundamentally in this changing world the original purposes of the founders of the Hospital were so wisely drawn that they have stood the test of time. I cannot refrain from quoting again the statement of Doctors Brown, Ingalls, Langmaid, and Webber in which they say:

"The Children's Hospital plan which it has been proposed to carry out has a threefold object:

1. The medical and surgical treatment of the diseases of children.
2. The attainment and diffusion of knowledge regarding the diseases of children.
3. The training of young women in the duties of nurses."

About certain of these indispensable objectives I wish to say a word. It will be a short word because I am conscious of those carefully compiled statistics which led some mathematician to conclude that if all the after-dinner speakers at all the dinners in all the cities of each of the United States were laid end to end it would be a very happy circumstance.

The first objective of the founders of the Children's Hospital, and its first objective today, is the medical and surgical treatment of the diseases of children. One finds in the hospital staff today the attributes of Lister in Henley's poem, which runs:

"His faultless patience, his unyielding will,
Beautiful gentleness and splendid skill."

One finds in the hospital not only a smooth and competent organization, but one is impressed also by an atmosphere which itself is a tremendous tribute to the professional staff, the nursing service, and the administration of any hospital. Such an atmosphere of helpfulness, cheerfulness, understanding and competence does not come about by accident. It is the product

of deliberate intent and it is one of the most important possessions that a hospital can have. The chief factor in the maintenance of this atmosphere is expressed in the words of Francis Peabody: "The secret of the care of the patient is in caring for the patient."

The advances in medicine since 1869 have imposed a good many problems on people and institutions who are trying to keep up with them. When one finds hospital organization which is effective, it seems also that it is enlightened, complex, and expensive. In keeping up with developments in the recognition and treatment of disease, the Board of Managers of the Children's Hospital have displayed a notable sense of responsibility and understanding. For example, consider the extraordinary evolution of diagnostic procedures in this seventy-year period. The problems that are placed before the laboratory are difficult and often crucial. Sometimes also they are unexpected. I remember a charming old man with red hair just turning white who came into the hospital with pernicious anemia only a short time before Dr. Minot and his colleagues studying the disease in hospitals introduced the treatment of liver which has revolutionized the management of that hitherto dreadful disease. Because we didn't have Dr. Minot's liver treatment, it was considered advisable to transfuse this agreeable gentleman. We discussed with him the problem of a suitable donor and decided, since the matter was not an urgent one, that we would bring down from the mountains where he lived some of his family who might serve to supply the blood. I explained to him the importance of properly matched blood and the undesirability of giving him the wrong variety. He said, "Oh, Dr. Burwell, I understand perfectly. Certainly I wouldn't want to come down to Nashville and get any of this here Republican blood in me."

The care of patients in the Children's Hospital has had results far beyond the immediate ones concerned with the children who have been cared for. It has served to set a standard of what the care of children

should be, and the responsibility is now upon the Hospital of maintaining that standard and that example. It seems to me much more important that the quality of care should be maintained than that the number of children admitted should be increased.

The second objective of the founders of the Children's Hospital had to do with the attainment and diffusion of knowledge regarding the diseases of children. There are great opportunities in such a hospital as the Children's of promoting and improving the care of patients through research. One of the great developments of modern medicine—the so-called full-time teaching—has tremendously improved both the care of patients and the success with which hospital staffs have taken advantage of the opportunities which exist in hospitals for advancing the knowledge of disease. This is inseparable from its functions of caring for patients, since the best teaching is the example set by the Hospital in the care of patients, in keeping up with advances, and in maintaining a scholarly attitude toward medicine. This example and the other opportunities in the Hospital affect undergraduate medical students, members of the house staff and others pursuing graduate work, the community, the professors, and the nurses.

The third objective of the founders—the training of young women in the duties of nurses—is an important part of the teaching function of the Hospital. The Children's Hospital has reason to be proud of its contribution to nursing education. It is not entirely clear to me how the responsibility of training nurses should be divided between the community, the hospital, and colleges. The problem is inseparable from the hospital, but it is certainly not the hospital's sole responsibility.

It is seen, then, that the Children's Hospital, like other great hospitals, plays in our civilization a function peculiar to itself. I think it is its duty to do so. I conceive that privately supported institutions in this period of our history have a particular responsibility to justify themselves by playing a role which

their freedom and flexibility permit them to play with particular success: the role of leadership, innovation, and advance.

One of my friends went a few years ago to call on Sir James McKenzie, the distinguished physician who did so much to advance the knowledge of heart disease in the last generation. My friend was interested in many of the problems which occupied the thoughts of Sir James and they found much to discuss during the long and pleasant day. At five o'clock they went into the drawing room to have tea with Lady McKenzie. As they came in, Sir James said, "My dear, I shall be very glad to have my tea; I am quite hoarse listening to Dr. Robinson." Before my voice runs down from listening to speeches about the Children's Hospital, I want to say what a happy circumstance I consider it to be that the Harvard Medical

School is the partner of the Children's Hospital in these three great purposes. The relations between the Hospital and the Medical School Departments of Pediatrics, Surgery, Bacteriology, and Pathology are fundamental to the success of both the Hospital and the School. The coöperation has been effective not only in the care of patients and in teaching, but also in the production of knowledge — knowledge which is not limited to Pediatrics, but which has helpfully affected the whole circle of medicine. Our thanks are due the Board of Managers for this stimulating and impressive occasion. We congratulate them again upon the past and we wish from our hearts that the high purposes of the Children's Hospital will continue and that the accomplishments of the past will be exceeded by the achievements of the future.

Harvey Cushing, '95

It is probably not too much to say that by the death of Dr. Cushing the Harvard Medical School lost its most distinguished alumnus, and this country the most outstanding medical personality of his time. In point of eminence the only possible rival in this category would doubtless be Oliver Wendell Holmes. Harvey Cushing had all the attributes of genius.

His medical career may be said to have started with his birth on April 8, 1869, since he had the heritage of physicians from his father, grandfather, and great-grandfather. A few of the significant landmarks in his life may be recalled as a background to what shall be said concerning his character and attainments. His early life was spent in Cleveland, Ohio, where he was born, and he always regarded it as his home. From Cleveland he went to New Haven and graduated from Yale in 1891. In college he was an ardent baseball player and to the team-play which this sport required may be traced his subsequent development of team-play at the operating

table and indeed in many of his professional activities.

In 1895 Dr. Cushing graduated from the Harvard Medical School with the degrees of M.A. and M.D., and following this, served as an interne at the Massachusetts General Hospital. Even at this stage it was evident that he possessed more than the usual requirements of house officers, since a glance at the hospital histories which he made at that time discloses that they were illustrated by beautiful and accurate sketches to supplement the written record. From Boston he went to Baltimore and at The Johns Hopkins Hospital came under the influence of Halsted. From this master surgeon he learned and quickly appreciated the value of the three fundamental teachings of the "Halsted School," namely, meticulous care in the handling of tissues, absolute hemostasis, and the use of fine silk for the closure of wounds in many layers.

After several years as resident in surgery at Hopkins Dr. Cushing spent a year abroad working in Kronecker's laboratory

in Berne on a problem concerned with intracranial pressure, and in Sherrington's laboratory in Liverpool mapping out electrically the motor cortex in arthropods. He always said that this was one of the most interesting and profitable years that he ever spent, and it was doubtless this work which really inaugurated his interest in the surgery of the nervous system. Returning to Baltimore he was given a position on the teaching staff of the Johns Hopkins Medical School and Hospital where he advanced from assistant to associate professor of surgery between 1901 and 1912. During these years his association and friendship with Sir William Osler became closer, and many of his earlier investigations and writings were completed with Osler's encouragement and helpful criticism. It was during this Baltimore era that Harvey Cushing not only laid the foundations of modern neurosurgery, superseding with a more refined technique the pioneer work of Sir Victor Horsley, but in the same period his investigations on the pituitary gland in animals and in human beings culminated in 1912 with the publication of "The Pituitary Body and Its Disorders." This monograph was at the time an epoch-making contribution and is today a medical classic. It was in Baltimore too, that his success as a teacher became manifest and it is to be recalled that the course which he gave in operative surgery on dogs was unquestionably the most sought after elective by the third year class of the medical school.

By the time that Cushing was offered the Moseley professorship of surgery at Harvard in 1912 he was already a marked man and was even then recognized as the foremost neurological surgeon in this country. When he took up his new duties at the Harvard Medical School he was likewise made surgeon-in-chief to the Peter Bent Brigham Hospital. During the next twenty years this institution became famous throughout the world as the place where neurosurgery was practiced and taught by the master, and it was the mecca for those both in this country and abroad who wished

to learn this newest surgical specialty. Pupils flocked to Dr. Cushing from Great Britain, France, Germany, Austria, Holland, Belgium, and indeed from nearly all the countries of Europe.

During his Boston years, in addition to his daily arduous work at the hospital operating, lecturing, and giving surgical clinics, a vast array of scientific, philosophic, and medically historic articles poured forth from Harvey Cushing's pen. Even to those who thought that they knew how to work hard it was impossible to understand how the man could continue such a terrific pace. That he must have had an unusually rugged physical make-up goes without saying. During the summer months when not abroad receiving some new and important honor, he would relinquish his work long enough toward the end of the afternoon to play a set or two of tennis, perhaps three times a week. On Sundays many of his friends, both young and old, gathered at his home tennis court where sets of doubles were played by groups in turns. Those who were not playing were served tea by the incomparable hostess, Mrs. Cushing.

It would require a volume in itself to deal adequately with Dr. Cushing's scientific investigations even during his Boston period. It is evident that his interest in the pituitary gland continued unwavering as indicated by papers dealing with a great variety of clinical and laboratory investigations of the hypophysis. These may be said to have culminated in 1932 with his description of a new entity,—pituitary basophilism,—now known as Cushing's disease. In monographic form were "Pathological Findings in Acromegaly" (1927) and "Pituitary Body and Hypothalamus" (1932). But other fields in neurological surgery yielded equally important subjects. His "Tumors of the Nervus Acusticus" (1917) for the first time offered a means of helping patients having such a tumor without a prohibitive operative risk. Another outstanding contribution, written with Dr. Percival Bailey, was "A Classification of the Tumors of

the Glioma Group on a Histogenetic Basis with a Correlated Study of Prognosis" (1926). In 1932 he published "Intracranial Tumors, Notes upon a series of two thousand verified cases with surgical mortality percentages pertaining thereto." This monograph represented a summary of his life's work with brain tumors, and it is safe to say that his record of accomplishment stands unrivalled and even unapproached.

Dr. Cushing's work in Boston was interrupted by two years in the last World War, 1917-18. During this period he served at first as director of the U. S. Base Hospital Number 5, with the B. E. F. in France, and in 1918 he was called to the A. E. F. as senior consultant of neurologic surgery with the rank of colonel. A large part of the summer and autumn of 1917 was spent at 46 Casualty Clearing Station (British), and it was here that he developed his operative technique of handling gunshot wounds of the head. These experiences he published in the *British Journal of Surgery* (1918) entitled, "A Study of a Series of Wounds Involving the Brain and Its Enveloping Structures." His teachings on this subject became the standard throughout the world. For his war services he received the Distinguished Service Medal of the United States, the Companion of the Bath of England, and Officer of the Legion of Honor of France. Throughout his service in the war Dr. Cushing had kept a voluminous diary, and from this there emanated in 1936, "From a Surgeon's Journal," which was read by laymen as well as physicians with equal interest and avidity.

While still engaged in his usual duties at the Brigham Hospital Cushing undertook to write the "Life of Sir William Osler" at Lady Osler's request. This Herculean task was accomplished in 1925, and at once was awarded the Pulitzer Prize in biography for the year.

As a testimonial for his 60th Birthday in 1929 the Archives of Surgery published a special number as a Festschrift, containing scientific articles by nearly all of the

master's pupils. At the required age of 63 Dr. Cushing retired from his medical school and hospital positions in Boston, and a year later was called to New Haven as Sterling Professor of Neurology and director of studies in the History of Medicine at Yale University. During his first year or two in New Haven he suffered severely from pain in his legs due to a combination of arterial diseases, but his mind and spirit rose above physical ills and he continued to work and write even while he was a patient in the hospital. Indeed his largest and one of his most important monographs was completed with the assistance of Dr. Louise Eisenhardt in 1938, "Meningiomas. Their Classification, regional behaviour, life history and surgical end results."

In a brief sketch of this kind it is impossible to dwell upon more than a few of the high points of a life which was so full of all manner of interests. Dr. Cushing's bibliophilic tendencies were well known, his medical library one of the finest, and his knowledge of medical history equalled by few. Indeed, to read his scientific and other articles is to gain an education in the history of medicine. And what of his academic honors? Even to list them would require many pages.

On his 70th birthday, April 8, 1939, a large number of Dr. Cushing's friends and pupils met to do him honor in New Haven under the auspices of the Harvey Cushing Society. It was a joyous occasion, and the "Chief" was apparently in very good health. In his brief remarks after the dinner one could feel how deeply he appreciated the tributes which were paid him. He was as active as ever during the summer but died suddenly on October 7, 1939, as a result of coronary occlusion. He was buried as was fitting, in Cleveland, Ohio. Let us leave him, however, in New Haven, working and writing in his office at the hospital, surrounded by his books, many faithful friends and followers, and in the atmosphere of his own well-loved alma mater.

GILBERT HORRAX, M. D.

ASSOCIATION OFFICERS

Lincoln Davis, *President*
 Lawrence K. Lunt, *Vice-president*
 Clark W. Heath, *Secretary*
 Marshall K. Bartlett, *Treasurer*

COUNCILLORS

R. E. Alt F. C. Newton
 F. S. Hopkins W. R. Ohler
 D. Merrill E. L. Peirson
 R. N. Nye C. L. Short
 G. W. Taylor

EDITOR

Clark W. Heath

BUSINESS MANAGER

Marshall K. Bartlett

Mrs. K. B. Wilson, Secretary
Room 108, Harvard Medical School
Boston, Mass.

TREASURER'S REPORT

RECEIPTS

Appeals	\$2,107.00
Annual meeting	62.00
Advertising	999.72
Bulletin	121.00
Miscellaneous	4.00
	<hr/>
	\$3,293.72

EXPENDITURES

Bulletin	\$1,869.92
Appeals	231.36
Dinner to 4th. year class	289.73
Entertainment	18.45
St. Louis Dinner	20.58
Gift Medical School	579.60
Gift Medical School	50.00
Gift Aesculapiad	50.00
Commencement Fee	50.00
Annual Meeting	68.00
Salary	720.00
Office Equipment	113.56
Office Supplies and Misc.	126.05
Revising files	17.55
	<hr/>
	\$4,204.80

Bank Balance June 1, 1939

\$2,250.30

BOOK REVIEW

PATHOLOGICAL TECHNIQUE. Frank B. Mallory, M.D., 434 pp. Philadelphia: W. B. Saunders Co., 1938.

The first edition of "Pathological Technique" by Mallory and Wright appeared in 1897. At that time it was virtually the only guide for the practical performance of the various procedures in pathological laboratories. This original text was of such value to successive generations of laboratory workers that it passed through eight editions. In the period from 1924, the date of the last edition of Mallory and Wright and the appearance of this new book, the value was still so great that the second-hand copies sold at a premium.

The new "Pathological Technique", written by Dr. Mallory alone with the aid of his associates at the Mallory Institute of Pathology, has been somewhat simplified from the older work. The book is divided into three parts, covering general material and histological methods, special histological methods, and autopsy methods. The chief value of this work lies in the fact that it is not a compendium of numerous diverse methods, but rather it is a selection of those methods which have been utilized and found satisfactory by a master of pathologic technique. Directions for all types of examinations of histologic material are given, ranging from the preparation and examination of unfixed material to the complex staining methods for finer cellular elements. The newer methods of investigation, such as microincineration, are given adequate consideration.

A very useful chapter is that on the staining methods best suited to special organs, giving in detail those methods of fixation and staining that have been found most satisfactory for demonstrating normal and altered cellular constituents in the various body tissues. This chapter is especially helpful, for so great a multiplicity of stains have been proposed for various purposes that few but those thoroughly experienced in a given field have any knowledge of what methods are of most value and what may be but a waste of time and material. Some of the methods recently developed by Dr. Mallory himself are included, such as the lead chloride hematoxylin stain for axis cylinders.

Throughout the book one senses that it has been prepared by a man who is a master of the various procedures given and not merely one who has read about them and compiled them.

SHIELDS WARREN, M.D., '23

